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ABSTRACT

A person-centered approach was followed for the study of patterns in personality development in middle childhood through early adolescence. In a longitudinal study of 100 children, the "big five" personality factors--extraversion, agreeableness, conscientiousness, emotional stability, and openness--were assessed in person descriptions by teachers on the California Child Q-Set (CCQ) at the ages of 7, 10, and 12 years. Cluster analysis on these five personality dimensions in three measurement waves resulted in three clusters. The clusters were very similar to personality types found by Robins and others (1994) in American boys. Following the Robins study, Cluster 1, consisting of a nearly equal number of boys and girls, was called Overcontrollers; Cluster 2, consisting of mostly girls and a few boys, was called Resilients; and Cluster 3, consisting of mostly boys and a few girls, was called Undercontrollers. The clusters differed in ego-resiliency and ego-control as well as in level of the big five personality dimensions over the investigated age episode. Furthermore, the clusters differed on school competence, intelligence, and acceptance and rejection by classmates. Results indicated a remarkable similarity between the three cluster types to those found in the Robins study. (Author/DR)

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Personality Development in Middle Childhood

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Personality Development in Middle Childhood

Abstract

A person-centered approach was followed for the study of patterns in personality development in middle childhood through early adolescence. In a longitudinal study of initially 100 children the big five personality factors, e.g., Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness, were assessed in person descriptions by teachers on the California Child Q-Set (CCQ) at the ages of 7, 10, and 12 years. Cluster analysis on these five personality dimensions in three measurement waves resulted in three clusters. The Clusters were very similar to personality types found by Robins et al. (1994) in US boys. Following Robins et al., Cluster 1, consisting of an nearly equal number of boys and girls, was called Overcontrollers; Cluster 2, consisting of mostly girls and a few boys, was called Resilients; and Cluster 3, consisting of mostly boys and a few girls, was called Undercontrollers. The clusters differed in ego-resiliency and ego-control as well as in level of the big five personality dimensions over the investigated age episode. Furthermore, the clusters differed on school competence, intelligence, and acceptance and rejection by classmates. The similarity of our findings and those of Robins et al. was discussed.

Personality Development in Middle Childhood

In studies of personality development two main strategies -- a variable-centered and a person-centered approach -- are being distinguished. Variable-centered approaches stress changes and correlations existing in single variables or dimensions in a group of persons measured across time. Person-centered approaches are based on changes within a person, for example, the extent to which a personality profile changes or remains constant over time. The person-centered approach views personality development not in terms of a set of static traits, but rather in terms of more or less stable behavior-organizational features that qualify a person's dyadic and group relationships and that may change over the course of life (Hartup & van Lieshout, 1995).

In the person-centered study of personality a category and a prototype approach are distinguished. In the category approach procedures such as cluster analysis are used to classify individuals into non-overlapping categories depending on the pattern of change of several personality dimensions deemed basic by the proponents of the developmental typology. In the prototype approach typological categories are defined in terms of their prototypical exemplars. In the prototype approach category membership need not be "all or none" but is a matter of degree; individuals differ in their degree to fit the category prototype, with some persons being more prototypical instances than others. Inverse (or Q) factor analysis is used to define prototypes as well as the degree to which an individual resembles the prototype. The prototype approach is particularly useful in single measurement studies, whereas the cluster approach seems more appropriate for the study of developmental types based on repeated measurements.

For this paper we used cluster analysis to distinguish categorical clusters or patterns of personality development in California Child Q-set (CCQ, Block & Block, 1980) personality descriptions by teachers of children (boys and girls) over the age period of five years in elementary school years. We will compare our findings with prototypical types found by Robins et al. in one-time personality descriptions by mothers (also with the CCQ) of 10-years old boys. Whereas Robins et al. used all 100 items of the CCQ to develop their personality prototypes, we used children's scores on the five factors of the five factor personality model (cf. Goldberg, 1993), i.e. Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness, respectively. These five personality factors appeared to be fundamental distinctive dimensions in comprehensive personality descriptions. In an earlier study these five personality factors showed continuity and measurement equivalence from toddler age through late adolescence in a large sample of California Child Q-sort descriptions by teachers and parents as well as in those of best friends and adolescents themselves in adolescent years (van Lieshout & Haselager, 1994).

Categorical developmental clusters.

In our study, at each of the ages of 7, 10, and 12 years different teachers gave a California Child Q-set (CCQ, J.H. Block & J. Block, 1980) description of 79 children (35 boys , 44 girls). At these ages children were in elementary school and the great majority of the children had the same teacher all day. The subjects participated in a longitudinal study of initially 100 firstborn infants (50 boys, 50 girls) from lower class families, starting at the age of nine months (Riksen-Walraven, 1978).

Measures.

Five Personality Factors. For each CCQ the following five personality factors were assessed:

Extraversion (9 items). Physical activity, energy, and emotional and verbal expressiveness versus shyness, inhibition, self-isolation, withdrawal, and nonassertiveness.

Agreeableness (14 items). Warm, empathic consideration of other people's needs, emotions and interests and open, trustful interpersonal orientation versus aggressive, irritated, and antisocial exploitation of others.

Conscientiousness (8 items). Concentrated, planful, reliable, and competent high achievement orientation.

Emotional Stability (11 items). Self-reliance, being easy-going, independent and resourceful versus fearful, anxious, emotionally disorganized under stress, and low self-esteem.

Openness (7 items). Open to new ideas and experiences, resourceful, curious and exploring, creative, sense of humor, and active fantasy life.

Scale scores were mean item scores averaged over all items of a scale and ranged from 1.0 to 9.0.

Clusters of Developmental Personality Profiles inTeacher's CCQ-descriptions. In order to distinguish groups of children with different personality profiles we computed cluster analyses using Ward's method (1963) on the five personality factor scores of teachers' CCQ descriptions at each of the ages of 7, 10, and 12 years. We decided to report clusters with more than 5% of the subjects. The cluster analyses on these fifteen variables resulted in 6 clusters that pairwise formed three overall clusters. The dendrogram of the final stage of the cluster analysis is presented in Figure 1. In the rest of this paper we will discuss the three clusters only.

Insert Figure 1 about here

Two of the three overall clusters contained a clearly unbalanced number of boys and girls, whereas the third cluster had a more or less equal proportion of boys and girls.

Three Clusters, Ego-Resiliency, Ego-Control

To further qualify the clusters we related them first to the personality dimensions Ego-resiliency and Ego-control. Whereas the big five model represents a basic set of descriptive personality dimensions, other personality theories refer to individual differences in personality functioning. Block and Block (1980) integrate concepts of psychodynamic theory, e.g. impulse control, and Lewinian dynamics of motivational states. Their basic construct of ego-resiliency refers to an individual's flexible adaptation to changing situational demands, especially frustrating and stressful encounters, or more specifically to the "dynamic capacity of an individual to modify his/her modal level of ego-control, in either direction, as a function of the demand characteristics of the environment" (Block & Block, 1980, p.48). Persons who are able to modify their ego-control optimally will reach higher levels of ego-resiliency, as is shown in Figure 2. Overcontrolled individuals as well as undercontrolled individuals will show lower ego-resiliency.

Insert Figure 2 about here

Because Ego-resiliency and ego-control were moderately stable over the investigated five-year episode we averaged Egro-resiliency and ego-control

scores derived from teacher's CCQs over three waves. A repeated measures MANOVA of Cluster (3 clusters) by Gender by Dimension (Ego-resiliency, Ego-control) showed a main Cluster effect, $F(2,73) = 11.84$, $p < .01$, that was further qualified by a Cluster by Dimension interaction effect, $F(2,73) = 46.19$, $p < .01$. The three clusters were defined by different combinations of ego-resiliency and ego-control (see Figure 3, Upper panel). (In Figure 3 the three clusters are plotted separately for boys and girls: no gender differences nor interactions involving gender were found).

Insert Figure 3 about here

In further dimension-specific ANOVA's followed by Scheffé's tests, Cluster 2 scored significantly higher on ego-resiliency than Clusters 1 and 2, whereas Cluster 2 scored significantly higher than Cluster 3. The three Clusters also scored significantly different on Ego-control: Cluster 1 was significantly more overcontrolled, whereas Cluster 3 was significantly more undercontrolled. Now, I show you the results of Robins et al. of their three prototypes based on the 100 items of the CCQ. In the Figure the black/white marks refer to Caucasian and Afro-American subsamples of boys). These results are remarkably similar to ours. Their Type 1 and Type 3 correspond even in the score level (T-scores in both studies) with our Clusters 2 and 3, respectively. Our Cluster 1 scored somewhat higher on ego-resiliency than their Type 2. Guided by Block's theoretical framework Robins et al. called their types Resilients (Type1, our Cluster 2); Overcontrollers (Type 2; our Cluster 1); and Undercontrollers (Type 3; our Cluster 3). We will give our Clusters the same

names: Overcontrollers (Cluster 1); Resilients (Cluster 2); and Undercontrollers (Cluster 3).

Three Clusters and the Big Five.

The factors of the five factor model (FFM) showed mean stability coefficients of r =.51 in personality descriptions by teachers over age periods of up to five years. Age differences were very small and no significant Age by Cluster interaction effects were found. Therefore, teachers' FFM scores were averaged over three measurement waves. Repeated measures MANOVAs and factor specific ANOVAs followed by Scheffé's tests were computed. Our results are presented in Figure 4 (Upper graph). Again we compare our results with those of Robins et al. (see Figure 4, lower graph). Different letters in the graphs indicate significant differences per factor between the three clusters.

Insert Figure 4 about here

Our Cluster 2 (the Resilients) scored high on all five factors, similarly as the Resilients in Robins et al. (Type 1). Our Overcontrollers scored as high as the Resilients on Agreeableness, moderate on Conscientiousness, but lower on the other three factors, especially Extraversion. Robins et als. Overcontrollers showed the same pattern, except that they are significantly less emotionally stable than their Undercontrollers. In both studies, Undercontrollers have a very similar big five profile: they scored high on Extraversion but low on Conscientiousness and Agreeableness and moderate on Emotional Stability and Openness.

Three clusters and the Big Five according to mothers, best friends and self. *(If time is short I will skip this section)*

Personality descriptions by specific referent persons in a specific context reveal children's and referent persons' interrelatedness in context. Teachers describe children's personality in terms of boys' and girls' social and nonsocial behavior at school, mothers in terms of behavior at home, and best friends in terms of behavior in friendship relationships and in the peer group. Adolescents themselves have to integrate in their self-descriptions all such different contextual orientations. However, despite specificity of personality in contexts, there is consistency across contexts. Pairwise comparisons of personality descriptions of the same children and adolescents by different persons, i.e., fathers vs. mothers, teachers vs. parents, adults vs. peers, and adults vs. self, showed a mean convergent correlation of $\underline{r} = .48$ over all five personality factors (van Lieshout & Haselager, 1992).

Mothers gave CCQ descriptions at ages 10 and 12 years of age. Both CCQ descriptions were averaged. At 12 years of age also up to three best friends gave a CCQ description of the target child and targets gave a CCQ self description. Similar analyses were computed as on teachers' CCQ big five factor scores.

Insert Figure 5 about here

Mothers' personality descriptions (Upper graph) at the ages 10 and 12 years of the children were very similar to teachers' evaluations of children's personality. In mothers' view, Resilients scored highest on Agreeableness, Conscientiousness and Openness. Undercontrollers scored lowest on these factors whereas Overcontrollers scored in between. No significant differences were found for Extraversion and Emotional Stability. Findings for personality

descriptions by best friends of the target children (Middle graph) at 12 years of age were very similar to those of mothers. In the view of best friends Undercontrollers scored significantly lower on agreeableness, conscientiousness and openness, whereas differences on extraversion and emotional stability were not significant. Best friends did not discriminate between Resilients and Overcontrollers. For early adolescents the more internalizing behavior of Overcontrollers may be fairly difficult to observe. Also self descriptions of early adolescents (Lower graph) were similar to those of mothers and best friends, with the exception that Undercontrollers did not consider themselves lower in Openness than the other two clusters did.

Three Clusters and Gender. *(If time is short, I will skip this section)*

We further explored the gender specificity of the three clusters in two ways. First, we investigated the masculinity/feminity of the boys and girls in the three clusters. Second, we compared the constancy versus variability of the scores of boys and girls in the three clusters on the big five factors.

Masculinity/feminity. We first constructed a masculinity/femininty scale by averaging the scores of each child on CCQ-item 17 ["Behaves typically as a boy "(for boys) and "Behaves typically as a girl" (for girls)] of teachers' CCQs at ages 7, 10, and 12 and of mothers' CCQs at ages 10 and 12. Cronbach's alpha for this new 5-item scale was .61. An ANOVA with the three clusters and gender as factors on the masculinity/feminity scale resulted in significant main effects for Cluster, $F(2,71) = 4.72$, $p < .05$, and Gender, $F(1,71) = 11.77$, $p < .01$. Girls scored higher ($M = 6.6$) than boys ($M = 6.3$). The Resilients scored lower ($M = 5.8$) than the Undercontrollers ($M = 6.6$), and the Overcontrollers scored in between ($M = 6.3$).

Constancy/variability. We expected that the constancy/variability of the big five scores of the children in the three clusters might vary. More specifically, we expected that the Resilients would show more constant high score levels on the big five factors, whereas the Undercontrollers and Overcontrollers would reveal more variability in their scores over middle childhood years. We further expected more constancy in the resilient girls compared to the other groups. To test these hypotheses we computed a repeated measurements MANOVA of Cluster by Gender by Scale on children's individual standard deviations over the three scores of each of the big five factors. The analysis showed a significant main Cluster effect, $F(2,73) = 3.29$, $p < .05$, that was further qualified by a significant Cluster by Scale interaction effect, $F(8,292) = 2.06$, $p < .05$ (see Figure 6).

Insert Figure 6 about here

ANOVAs of Cluster by Gender on the standard deviations of each separate big five factor showed significant main Cluster effects on Agreeableness, $F(2,73) = 7.63$, $p < .01$, Openness, $F(2,73) = 3.21$, $p < .05$, and Emotional Stability, $F(2,73) = 5.22$, $p < .01$. Further Scheffé tests ($p < .05$) on the separate Cluster scores showed no significant differences for the Cluster mean scores on Openness, whereas the Resilients scored significantly higher on Agreeableness than the Undercontrollers and significantly higher on Emotional Stability than the Overcontrollers. These findings suggest that Resilients had more constantly high scores on Agreeableness compared to more variable lower scores of Undercontrollers and more constantly high scores on Emotional Stability compared to more variable lower scores of Overcontrollers. Further exploration

of gender differences showed that specifically resilient girls scored more constantly high on these two big five factors compared to the girls in the other two clusters.

Three clusters, IQ, school performance, peer attraction.

Thus far, differences in personality were shown in the eyes of different raters. At all three ages intelligence and school competence were assessed using standardized tests. At 10 and 12 years sociometric assessments were made in children's school classes of acceptance ("most-like" nominations) and rejection ("most-dislike" nominations).

In Figure 7 (Upper graph) our data are presented on school achievement and IQ, assessed with school achievement and IQ tests (averaged over the ages 7, 10 and 12 years) as well as on peer acceptance and rejection in children's school classes (averaged over the ages of 10 and 12 years).

Insert Figure 7 about here

These data showed that the Resilients scored highest on IQ, school achievement and peer acceptance and lowest on peer rejection. The findings for the Undercontrollers were the reverse of those of the Resilients, whereas the Overcontrollers scored in between. Compared to Robins et als. findings, our Overcontrollers have a more intermediate position in school performance, whereas Resilients and Overcontrollers are more similar in the US boys.

Three Clusters and antecedents in infancy. *(If there is lack of time, I will skip this section)*

Our subjects participated in a longitudinal study starting at the age of 9 months. At that age, maternal responsiveness and verbal, physical, and visual

stimulation were assessed as well as children's speed of information processing and their quality of exploration (Riksen-Walraven, 1978).

Separate ANOVAs of Cluster by Gender on each of these categories in mothers' and infants' behaviors showed main cluster effects for maternal responsiveness and maternal verbal stimulation, as well as for infants' quality of exploration. No other main or interaction effects were found. The results of subsequent Scheffé's tests are reported in Figure 8

Insert Figure 8 about here

Mothers of Overcontrollers were significantly more responsive and more verbally sitimulating than those of Undercontrollers, whereas mothers of Resilients scored in between. Scheffé's tests ($p < .05$) for quality of exploration were not significant

Discussion

In this discussion I want to emphasize the remarkable similarity between the three types, i.e. the Resilients, Overcontrollers, and Undercontrollers, in the study of Robins et al. and the three clusters in our study. The most important congruences in the design of both studies were the use of the California Child Q-set and a person-centered approach in distinguishing different personality types, i.e. distinctive groups of children with similar personality profiles. Besides these congruences there were a great many differences between both studies, such as the different context of the USA and The Netherlands, the CCQ descriptions by mothers in the USA and by teachers in The Netherlands, the sample composition of boys only in the USA and both sexes in the Dutch study, the single measurement in an homogeneous age group of boys versus the

repeated measurements over an episode of five years in our study, the prototypical person-centered approach on the 100 CCQ items versus the categorical procedure on the repeated measures of the big five personality factors. Despite all these differences the resulting types and clusters were very similar in terms of their personality functioning sensu Block and Block, in their personality description based on the big five personality factors, on further personality characteristics such as school performance, in terms of within-sample replicability for Caucasian and Afro-American boys in the USA and for boys and girls in The Netherlands. The three types and clusters reveal also a remarkable similarity over the middle childhood years from age 7 to 12 years. The Resilients score high on all five big five factors, high on ego-resiliency and optimally on ego-control. They are also well adapted in other domains such as school achievement, IQ, and acceptance in peer relations. Both other groups have specific adaptation problems. The Undercontrollers scored low on agreeableness and conscientiousness and their high extraversion indicates low impulse control. They have lower school achievement and are rejected by peers. The Overcontrollers are introvert and inhibited and emotionally unstable. However, there were some differences too between both studies. Our group of Overcontrollers were somewhat more resilient than the same group in the USA. Furthermore, per personality type the numbers of children as well the percentage of boys differed in both studies. Circa 66% of the USA boys were Resilients whereas in our sample only 14% of boys and 50% of the girls were Resilients. In our sample nearly as many boys (29%) as girls (34%) were classified as Overcontrollers whereas only 14% of the boys in the USA were Overcontrollers. In our sample, boys (57%) outnumbered girls (16%) by far in the group of Undercontrollers, whereas in the USA only 20% of the boys were

Undercontrollers. These different numbers of boys and girls in the three groups in both studies may be related to the longitudinal versus single measurement character of the studies or to differences in sample background. In our study, over the five middle childhood years particularly resilient girls scored more constantly high on agreeableness and emotional stability compared to undercontrolled and overcontrolled girls, respectively. Agreeableness and emotional stability are among the most distinctive features between Resilients and Undercontrollers and Overcontrollers, respectively.

The inverse Q factor analysis suggests only three replicable protypical personality types in the single measurements in the US boys. In our study each of the three clusters is formed out of two subclusters. Two of those clusters seem gender specific and confirm Block's (1971) suggestion that personality types should be studied separately for both sexes. One of the resilient subclusters is girl specific, whereas one of the undercontrol subclusters is boy specific. The subclusters will not be further discussed here. Contrary to Block's (19..) ideas, in middle childhood years more girls than boys form the resilient cluster, whereas more boys are among the Undercontrollers (cf. Feingold, 1994).

The clusters based on teachers' personality descriptions, are also recognized by best friends who often share children's school context, by their mothers and to some degree by adolescents themselves. Furthermore, antecendents of cluster differences are already visible in mothers' overtures to their children as well as in children's quality of exploartion at the age of nine months of the children. These differences wiil also be further explored in the subclusters.

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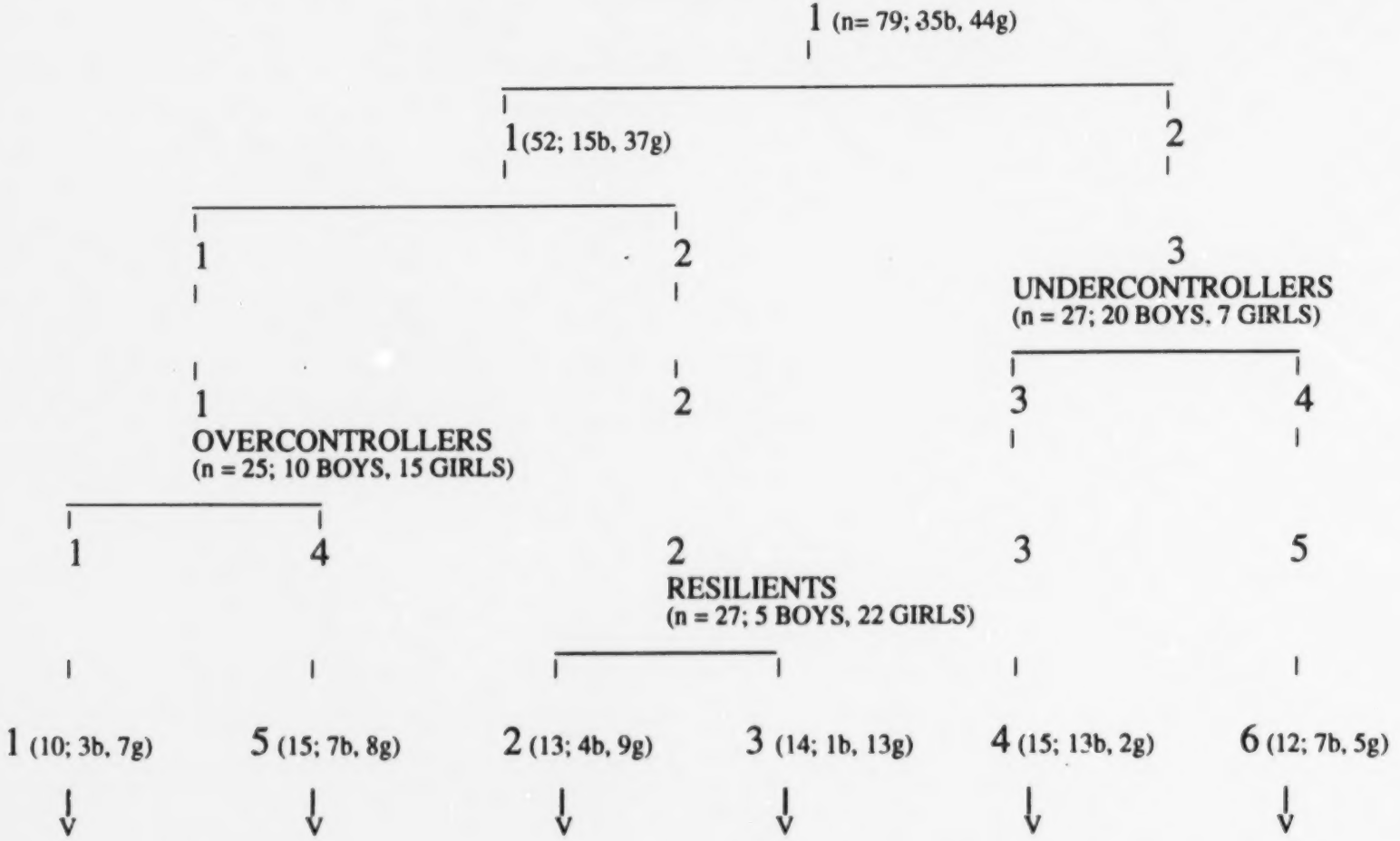
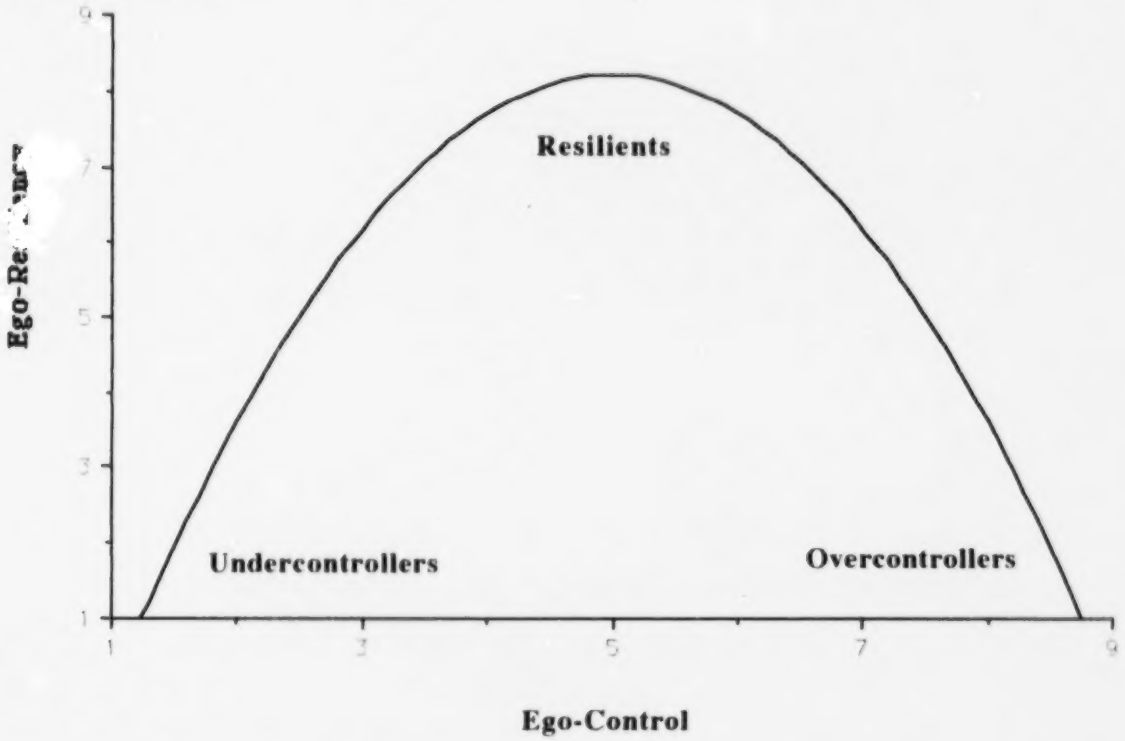
FIG 1

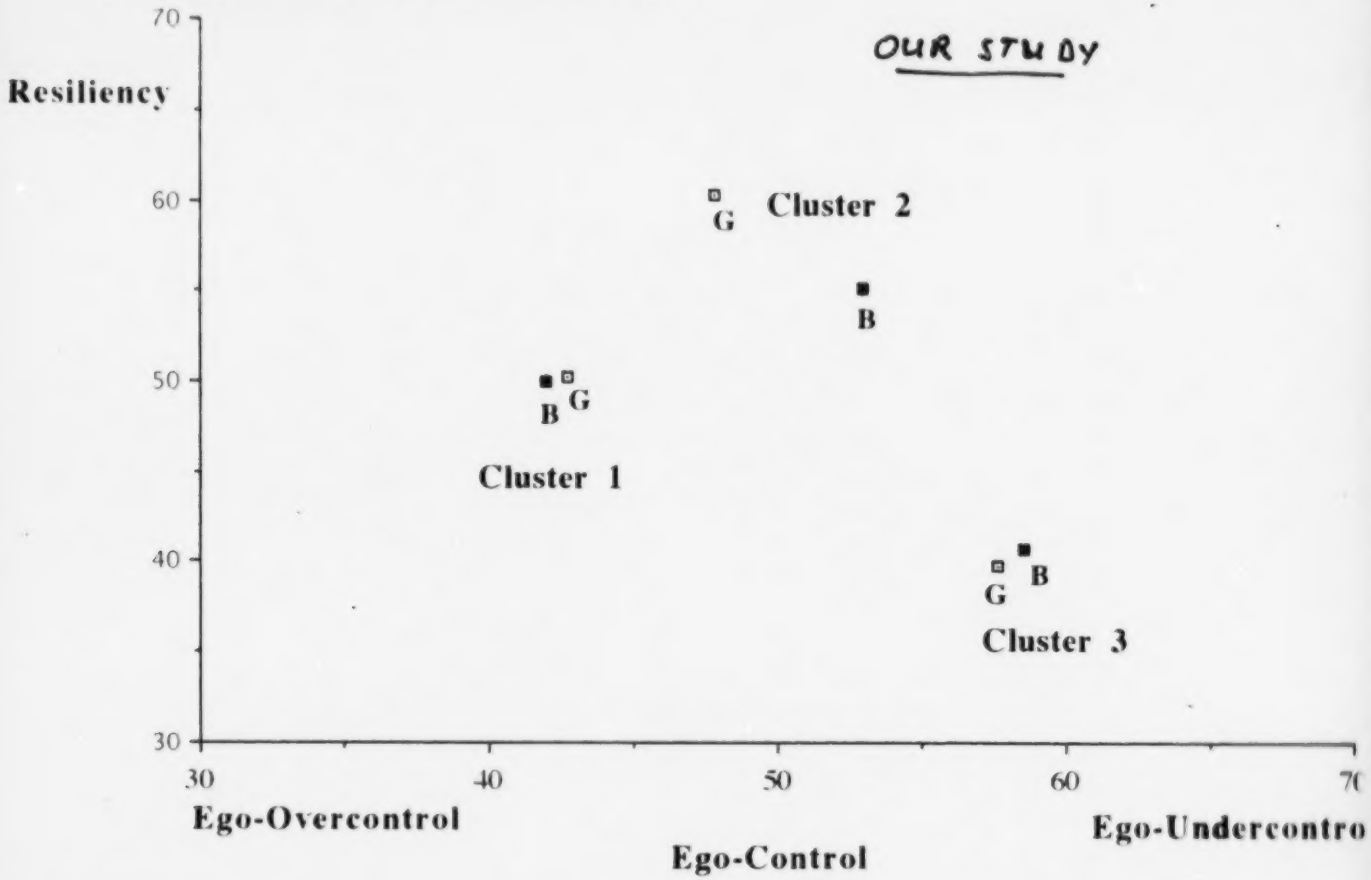
OVERVIEW CLUSTER ANALYSIS

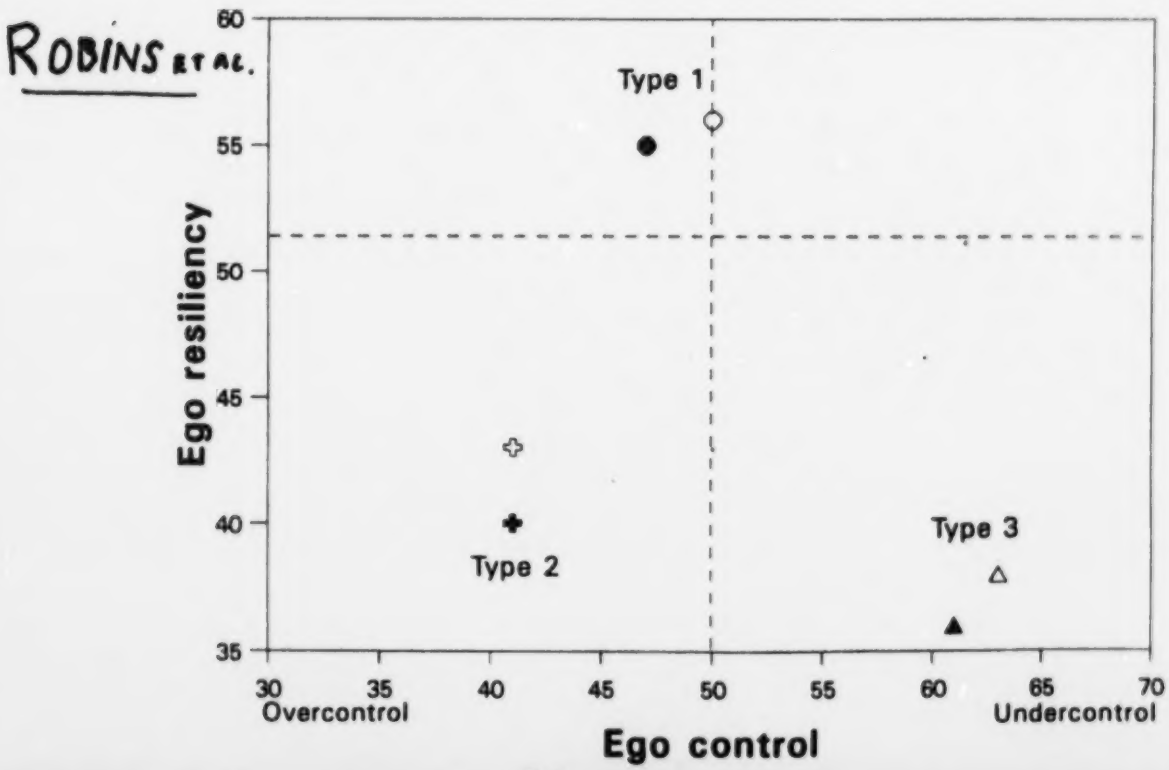


Theoretical Relation between Ego-Resiliency and Ego-Control (Block, 1971)



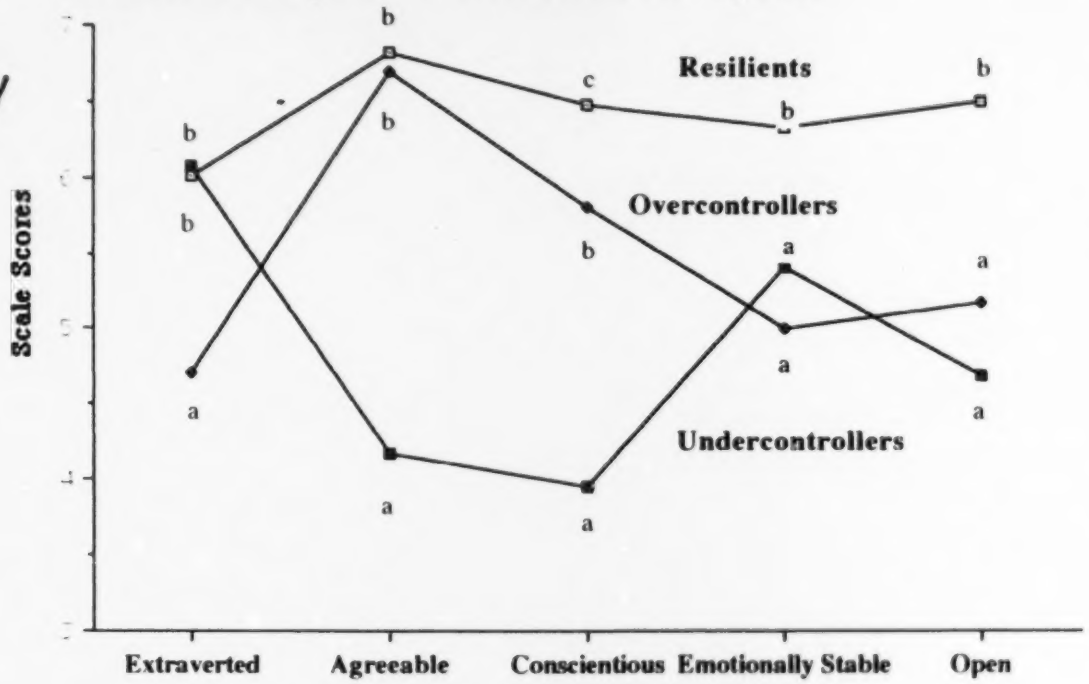
Personality Clusters as a Function of Ego-Control and Ego-Resiliency, separately for Boys (B) and Girls (G)





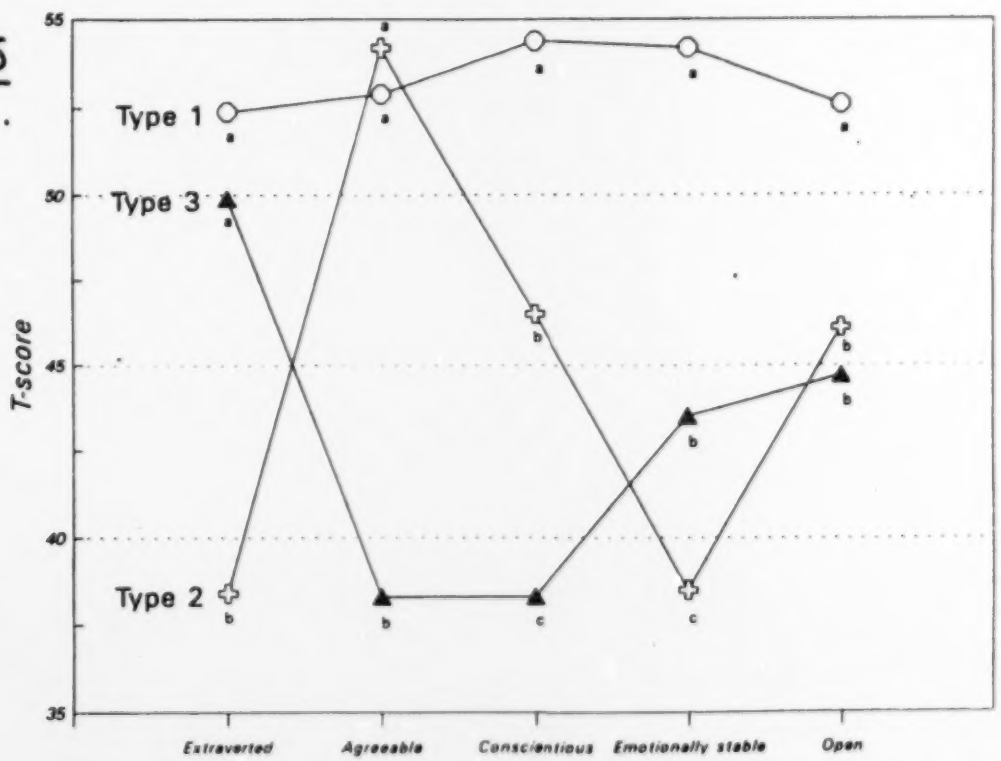
Big Five Profiles of the Three Personality Types: Teacher Descriptions over a Five-Year Episode

OUR STUDY



Big Five Personality Dimensions

ROBINS ET AL.



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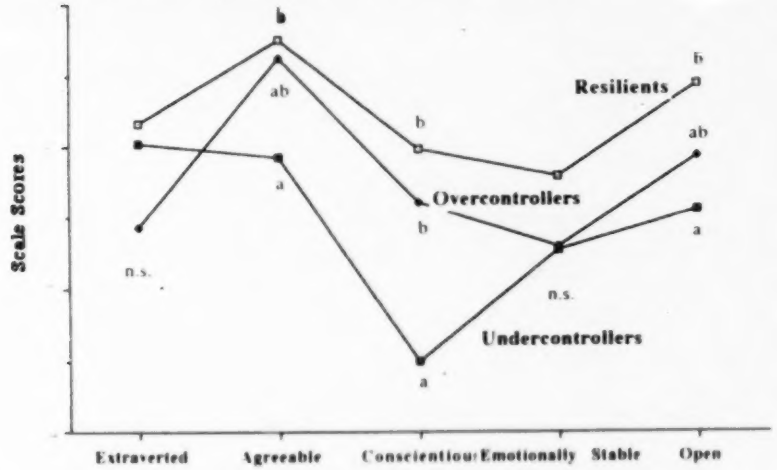
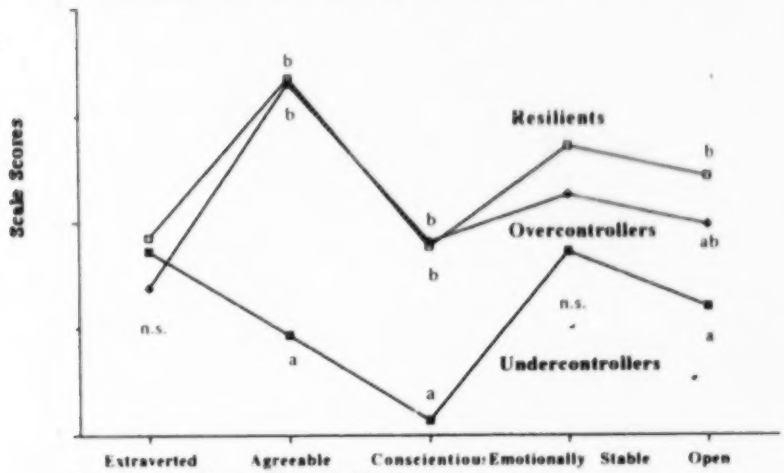
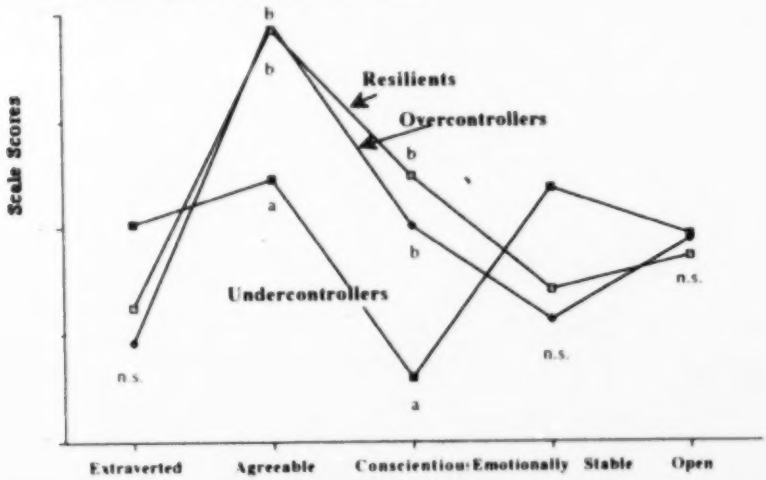
Big Five Profiles of the Three Personality Types:
Mother Descriptions at Ages 10 and 12 Years



Descriptions by Best Friend at Age 12 Years



Self Descriptions at Age 12 Years



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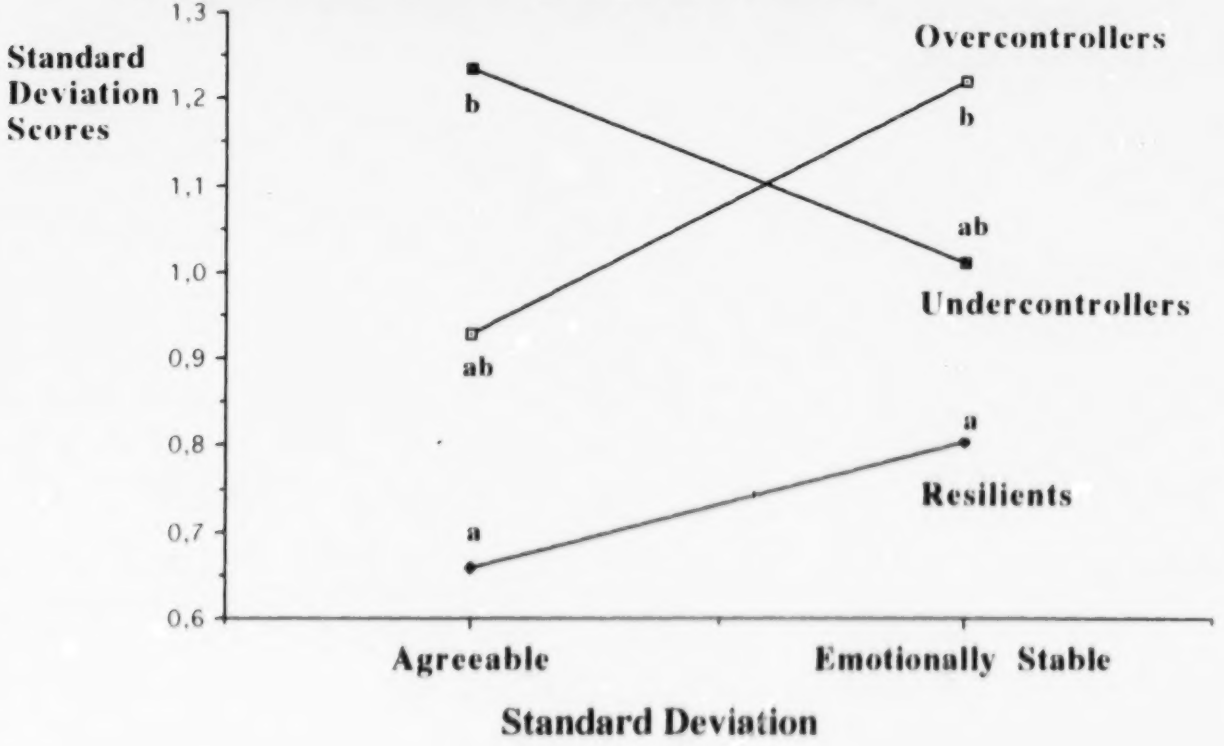
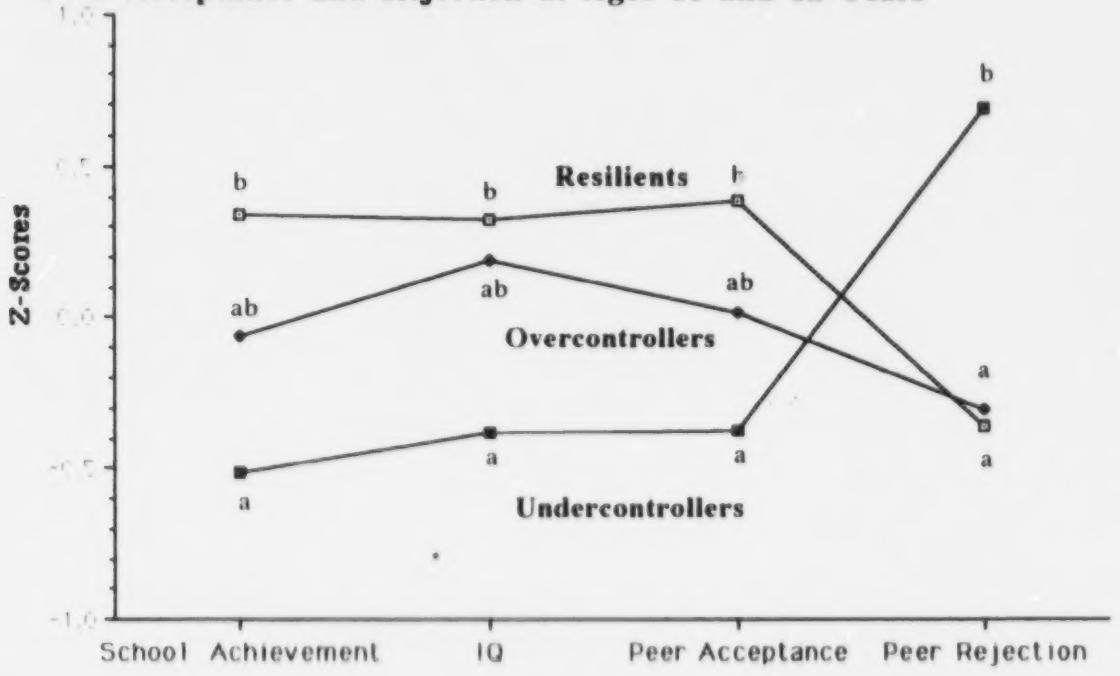
Individual Children's Standard Deviations of Big Five Scores over Three Measurements (at Ages 7, 10, and 12)



School Achievement and IQ of Three Personality Types over a Five-Year Episode;
Peer Acceptance and Rejection at Ages 10 and 12 Years



School Achievement, IQ, and Peer Attraction